

IN THE CLAIMS

25. (Currently amended) An ultrahigh [A] frequency emitting device, having a plurality of laser emitter pairs, each of said laser emitter pairs having a first and a second laser emitter emitting electromagnetic waves in the optical domain, at a first and a second frequency  $\omega_1$ ,  $\omega_2$ , respectively,  $\omega_1$  and  $\omega_2$  being different; a number of phase delay elements, each being placed in the path of said second laser emitter of one of said laser emitter pairs, and each said phase delay element adapted to impose a phase delay on the beam of said second laser emitter; means for slaving each said laser emitter pair in one of a frequency and phase manner, and a frequency, phase, and amplitude manner; a number of means for mixing each of the beams emitted by said first emitters with each of the beams emitted by said second emitters, and delayed by said phase delay elements thereby imposing a phase delay, and producing a number of signals at the ultrahigh frequency  $\omega_1[.]$ - $\omega_2[.]$  by heterodyning of said electromagnetic waves; means for converting an optical signal to an RF signal; and a number of antenna-forming means for emitting radiation at the frequency  $\omega_1[.]$ - $\omega_2$ .

26. (Previously Presented) The device of claim 25, wherein said laser emitters are microlasers.

27. (Previously Amended) The device of claim 25, wherein said phase delay elements imposing a phase delay are selected from the group consisting of electro-optical, magneto-optical, and thermo-optical elements.

28. (Previously Amended) The device of claim 25, wherein said frequency slaving means comprises means for forming a beat signal from the beams emitted by said first and second laser emitters of each said laser emitter pair, and means for adjusting the emission frequency of one of said first and second laser emitters of said laser emitter pair according to the beat signal.

29. (Previously Amended) The device of claim 28, wherein said means for adjusting the emission frequency comprises means for comparing the beat signal to a reference signal provided by a reference source, and means for modifying an optical length of a cavity of said one of said first and second laser emitters for emission frequency adjustment.

30. (Previously Amended) The device of claim 29, wherein said reference source is common to all of said laser emitter pairs.

31. (Previously Amended) The device of claim 26, which further comprises means for slaving said phase delay according to a beat signal between the beam which passes through said phase delay element and another beam.

32. (Currently Amended) An ultrahigh [A] frequency emitting device, having a plurality of laser emitter pairs, each said laser emitter pair having a first and a second laser emitter emitting electromagnetic waves in the electromagnetic domain, at a first and a second frequency  $\omega_1$ ,  $\omega_2$ ,  $\omega_1[i]$  and  $\omega_2$  being different; means for frequency slaving each said laser emitter pair; means for modifying the frequency of one of said laser emitter of at least one of said laser emitter pairs with respect to the frequency of the other laser emitter of said laser emitter pair; a number of means for mixing each of the beams emitted by said first emitters with each of the beams emitted by said second emitters, and for producing a signal at the ultrahigh frequency  $\omega_1[i]-\omega_2[i]$  by heterodyning of said electromagnetic waves; means for converting an optical signal to an RF signal; and a number of antenna-forming means for emitting radiation at the frequency  $\omega_1[i]-\omega_2$ .

33. (Previously Presented) The device of claim 32, wherein said laser emitters are microlasers.

34. (Previously Amended) The device of claim 32, wherein said first and second laser emitters of each pair are constituted by a dual frequency source, emitting at the respective frequencies  $\omega_1$  and  $\omega_2$ .

35. (Previously Presented) The device of claim 32, wherein said means for modifying the frequency comprises an electro-optical modulator.

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36. (Previously Presented) The device of claim 35, wherein said electro-optical modulator is a semiconductor modulator.

37. (Currently Amended) A radar device having [a] an ultrahigh frequency emitting device as in claim 25, with said first and second laser emitters being assembled in an array; a transmission by optical fibers being implemented between said phase delay elements, and means for mixing the emitted beams.

38. (Currently Amended) A radar device having [a] an ultrahigh frequency emitting device as in claim 25, with said first and second laser emitters being assembled in an array and multiplexed by a multiplexer, an optical fiber connecting the multiplexer and a demultiplexer.

39. (Previously Presented) The radar device of claim 37, wherein said frequency slaving means is arranged in an array.

40. (Previously Amended) The radar device of claim 37, wherein said frequency slaving means comprises means for forming a beat signal from the beams emitted by said first and second laser emitters of each said laser emitter pair, and means for adjusting the emission frequency of one of said first and second laser emitters of said laser emitter pair according to the beat signal, said beat signal forming means being merged with said means for mixing one of the beam emitted by the first laser emitter with each of the delayed beams, or each of the beams emitted by said first

laser emitters with each of the beams emitted by said second laser emitters and delayed by the phase delay elements to impose a phase delay.

41. (Previously Amended) The device of claim 38, wherein each said first and second laser emitters has a cavity and wherein said cavities of said first and second laser emitters are frequency shifted with respect to one another.

42. (Previously Amended) The device of claim 41, wherein said cavities are frequency shifted by a length adjustment.

43. (Previously Amended) The device of claim 42, wherein each said cavity is associated with a Bragg grating type mirror, implemented on a corresponding guide of said multiplexer.

44 (Previously Presented) The radar device of claim 38, wherein said frequency slaving means is arranged in an array.

45. (Previously Amended) The radar device of claim 38, wherein said frequency slaving means comprises means for forming a beat signal from the beams emitted by said first and second laser emitters of each said laser emitter pair, and means for adjusting the emission frequency of one of said first and second laser emitters of said laser emitter pair according to the beat signal, said beat signal forming means being merged with said means for mixing are of the beam emitted by the first

laser emitter with each of the delayed beams, or each of the beams emitted by said first laser emitters with each of the beams emitted by said second laser emitters and delayed by the phase delay elements to impose a phase delay.

46. (Previously Presented) A device according to claim 25 wherein the laser emitters constitute an arrangement selected from the group consisting of a mosaic, an array and a bar.

47. (Previously Presented) A device according to claim 32 wherein the laser emitters constitute an arrangement selected from the group consisting of a mosaic, an array and a bar.